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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,180	04/01/2004	Satoshi Hamasaki	01-615	6453
23400	7590	11/19/2004	EXAMINER	
POSZ & BETHARDS, PLC 11250 ROGER BACON DRIVE SUITE 10 RESTON, VA 20190			MALSAWMA, LALRINFAMKIM HMAR	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/814,180

Applicant(s)

HAMASAKI, SATOSHI

Examiner

Lex Malsawma

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20040401.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by **Wensel** (6,001,672).

Regarding claim 1:

Wensel discloses a method of resin-sealing a semiconductor device 210 (Fig. 5) formed by disposing the undersurface of a semiconductor chip 214 on one side of an island portion of a lead frame 220 and connecting the surface of the semiconductor chip to lead portions of the lead frame disposed around the semiconductor chip with plural bonding wires 217, the method comprising:

disposing the semiconductor chip 214 inside a cavity of a forming die 234 (Fig. 9) and injecting resin 224 through a gate of the forming die (i.e., region “238” where the encapsulant material source enters the cavity, see Fig. 9) to seal the semiconductor device with resin in a state where portions of the lead portions are exposed (note exposed tips of “220” in Fig. 5),

wherein the gate (i.e., region “238” in Fig. 9) of the forming die is disposed only in a surface of the cavity facing the surface of the semiconductor chip 214 and the resin is injected through the gate towards the surface of the semiconductor chip. Therefore, this claim is anticipated.

Regarding claims 2 and 3:

Wensel discloses a support board (216, 228) at the other side of the island portion, wherein the support board will prevent the island portion from being bent by pressure of the resin in the injection direction of the resin during the injection. Wensel discloses the gate is disposed at a face of the cavity that is opposite to the direction in which the surface of the chip faces; accordingly, the resin (224, 238) will be injected through the gate in a direction that is substantially orthogonal to the surface "direction" of the semiconductor chip. In other word, although the gate is not located directly in front of the chip surface, the gate is surely disposed only in a surface of the cavity that faces the surface of the chip; accordingly, resin entering the cavity will be injected at least in a direction orthogonal the surface of the chip, as well as in a direction towards the chip surface. Therefore, these claims are anticipated.

Regarding claims 4 and 5:

These claims are similar to claims 1 and 3 except that these claims are directed to the forming die. As detailed above, Wensel discloses all features of the currently claimed forming die; therefore, these claims are anticipated.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wensel** (6,001,672) in view of Lemaire et al. (5,417,905; hereinafter, "**Lemaire**").

Regarding claims 6-8:

These claims are similar to claims 1, 2 and 4 (anticipated by Wensel) except that these claims include limitations for an injection mark and its location. Wensel discloses the claimed invention but **lacks** the limitations with respect to an injection mark. Lemaire **teaches** that an injection mark 770 commonly results during/after injecting a resin into a mold comprising a cavity and that the top of the injection mark is lower than an end surface device (note Figs 28c-29b and Col. 18, lines 8-12). Although Wensel does not specifically disclose an injection mark, given Lemaire, it would have been obvious to one of ordinary skill in the art to modify Wensel by specifically reciting that an injection mark is formed because Lemaire teaches/shows that injection marks (having features as currently claimed) commonly result during a transfer-molding process similar to that disclosed by Wensel. Therefore, these claims are held obvious over the cited references.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references listed on the attached Form PTO-892 (note cited above) are cited to show methods and devices having features similar to those of the current invention.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lex Malsawma whose telephone number is 571-272-1903. The examiner can normally be reached on Mon-Fri (8 hours between 5:30AM and 10:00 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lex Malsawma *LM*

November 13, 2004

Matthew Smith
SUPERVISOR
TECHNOLOGY
EXAMINER
300
Matthew Smith
MATTHEW SMITH
SENIOR PATENT EXAMINER
TECHNOLOGY CENTER 2800